

本期重点推介

绿盲蝽 *Apolygus lucorum* 是我国黄河及长江流域为害棉花的优势盲蝽种类,其寄主植物包括棉花、玉米、葡萄、枣、蔬菜等多种农作物,在农业生产上危害性严重。为了探究绿盲蝽对寄主植物的嗅觉识别机制,为研制高效的引诱剂或驱避剂提供理论依据和新的思路,中国农业科学院植物保护研究所植物病虫害生物学国家重点实验室李彬、王桂荣和刘杨等通过 PCR 技术克隆了绿盲蝽 8 个具有完整 ORF 的气味受体基因序列,利用 qPCR 测定了这 8 个基因在绿盲蝽雌雄成虫不同组织(触角、头、胸、腹、足和翅)中的表达水平,并通过爪蟾卵母细胞体外表达结合双电极电压钳技术测试了这些气味受体对 56 种气味化合物的电生理反应,结果提示这些受体中的 AlucOR57 在绿盲蝽的寄主识别过程中可能发挥重要作用(pp. 1048–1058)。

肽聚糖识别蛋白(PGRP)可识别细菌细胞壁中的肽聚糖(PGN),在昆虫抵御微生物的先天免疫中具有重要作用。为探究桔小实蝇 *Bactrocera dorsalis* PGRP 基因 *BdPGRP-SB1* 在其免疫中的作用,西南大学植物保护学院和农业科学研究院张迎新和魏冬等采用 RT-qPCR 测定分析了 *BdPGRP-SB1* 在桔小实蝇体内的时空表达模式,并测定了桔小实蝇 5 日龄雌成虫分别注射大肠杆菌 *Escherichia coli* 0111:B4 肽聚糖(PGN-EB)和金黄色葡萄球菌 *Staphylococcus aureus* 肽聚糖(PGN-SA)后 *BdPGRP-SB1* 表达水平变化,以及 RNAi 抑制 *BdPGRP-SB1* 后大肠杆菌和金黄色葡萄球菌侵染的桔小实蝇雌成虫的存活率及大肠杆菌诱导下抗菌肽(AMP)基因 *attacin-A*、*defensin* 和 *diptercin* 表达水平变化,结果说明 *BdPGRP-SB1* 参与识别革兰氏阴性细菌,并可能参与 Imd 途径调控免疫反应(pp. 1070–1080)。

烟蚜茧蜂 *Aphidius gifuensis* 是烟蚜 *Myzus persicae* 生物防治中广泛应用的一种优势寄生蜂。为了筛选可用于规模化繁殖过程中烟蚜茧蜂羽化时间调控的最佳保幼激素,福建农林大学植物保护学院白晶晶、顾钢和赖荣泉等利用液浸法比较测定了 5 种保幼激素类似物即稀虫乙酯(ZR-512)、稀虫炔酯(ZR-777)、稀虫酯(ZR-515)、苯氧威[(对苯氧乙基)氨基甲酸乙酯]和保幼激素Ⅲ(2,6-壬二烯酸)不同浓度(5 000, 1 000, 200, 40 和 8 ng/μL)处理后烟蚜茧蜂羽化率、羽化时间、成蜂寿命、雌蜂比例和寄生率,并测定了这 5 种保幼激素类似物(1 000 ng/μL)处理后烟蚜茧蜂蛹内与蜕皮相关的酚氧化酶的含量和活性及几丁质酶的活性,发现 1 000 ng/μL ZR-512 和 200 ng/μL ZR-777 处理效果较好,可在生产上推荐使用(pp. 1091–1100)。(袁德成)

封面照片: 照片示甘蓝夜蛾 *Mamestra brassicae* (鳞翅目:夜蛾科)卵和初孵幼虫(A),幼虫(B),蛹(C)及成虫(D)。甘蓝夜蛾是我国北方间歇发生的一种多食性害虫,主要危害甘蓝 *Brassica oleracea* 等十字花科(Brassicaceae)蔬菜,也可危害茄科(Solanaceae)、藜科(Chenopodiaceae)、豆科(Leguminosae)等多种农作物。本期报道了变温对甘蓝夜蛾生长发育和繁殖的影响(pp. 1108–1116)。照片由崔娟于 2018 年 8 月拍摄于吉林长春。

Front cover: Photos show the eggs and newly-hatched larvae (A), larva (B), pupa (C) and adult (D) of *Mamestra brassicae* (Lepidoptera: Noctuidae). *M. brassicae* is a polyphagous insect pest with intermittent occurrence in Northern China. It prefers to attack cruciferous vegetables (Brassicaceae) such as turnip (*Brassica oleracea*), and also can infest many crop plants of Solanaceae, Chenopodiaceae and Leguminosae. In this issue, the effects of fluctuating temperature on the growth, development and reproduction of *M. brassicae* is reported (pp. 1106–1116). The photos were taken by CUI Juan in Changchun, Jilin in August, 2018.

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